

M E M O R A N D U M

September 11, 1975

To: Gerry Calkins

From: Shirley Prescott

Subject: Naselle Youth Camp STP Efficiency Study

Scott Jeans and I conducted a routine efficiency study on the above plant on July 22, 1975.

Attached is the standard survey report form showing plant information and results of lab and field tests.

This is a small activated sludge plant with extended aeration manufactured under the name "Air-O-Flow". It serves from 160-200 people.

At the time of the survey the plant was operating within secondary treatment levels showing a reduction of 90% BOD (6.93 #/day) and a reduction of 92% TSS (6.67 #/day). Median pH values ran 6.5. This slightly low value was attributed to an overload of chlorine bleach in the laundry water.

Good disinfection was noted for all coliform samples collected. Fecal coliform on all samples was 10 and chlorine residuals varied from 0.3 ppm in 15 seconds to 1.0 in 3 minutes.

Nutrient analysis of the composite effluent sample revealed the following levels:

	ppm	lbs/day
NO ₃ N	.80	.21
NO ₂ N	.02	.005
NH ₄ ⁺ N	8.0	2.14
T. Kjeldahl	8.2	2.19
OPO ₄ P	3.0	.8
T-OPO ₄	4.4	1.17

Flow readings taken at a 60° V-notch weir indicated the flow meter was reading 74% low. It would appear that at least part of the problem is the flow float bulb is rubbing against the side of the still well. Observed flows ranged from 0.011 to 0.068 MGD and averaged 0.032 MGD.

The boys at the camp do their own laundry which has resulted in a foaming problem and a low pH both of which appear to be a result of over zealous

use of washing soap and chlorine bleach. The foam created is hosed each morning into Peach Creek.

The chlorination meter is not operable.

There is an alarm system and light which is operable

SP:ee

STP Survey Report Form

Efficiency Study

City Naselle Plant Type _____ Pop. Served 160-200 Design _____
Youth Camp Capacity _____
 Receiving Water Peach Creek Perennial Yes Intermittent _____
 Date 7/22/75 Survey Period 9 - 2:30 Survey Personnel Prescott & Jeane
 Comp. Sampling Frequency 30 min Sampling Alequot 210 ml
 Weather Conditions (24 hr) dry Are facilities provided for complete by-
 pass of raw sewage? X Yes _____ No/Frequency of bypass _____
 Reason for bypass _____ Is bypass chlorinated? It can be Yes _____ No _____
 Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow .032 MGD How measured 60° V-notch weir
 Maximum flow .068 MGD Time of Max. _____
 Minimum flow .011 MGD Time of Min. _____
 Pre Cl₂ _____ #/day Post Cl₂ _____ #/day

Field ResultsInfluentEffluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	22	19		20.2	19	18		19
pH (Units)	7.8	6.8		7.4	6.8	6.1		6.5
Conductivity (µmhos/cm ²)	825	235		405	390	375		382
Settleable Solids (mls/l)	18.0	4.5	14.1		trace	trace	trace	trace

Laboratory Results on Composites

	Influent	Effluent	% Reduction	lbs/day
Laboratory No.	75-3150	3151		
5-Day BOD ppm	260	26.0	90%	6.93
COD ppm	520	56.0		
T.S. ppm	653	201		
T.N.V.S. ppm	286	147		
T.S.S. ppm	315	25	92%	6.67
T.V.S.S. ppm	88	12.0		
pH (Units)	7.9	7.0		
Conductivity (µmhos/cm ²)	560	350		
Turbidity (JTU's)	140	12.0		

Laboratory Bacteriological Results

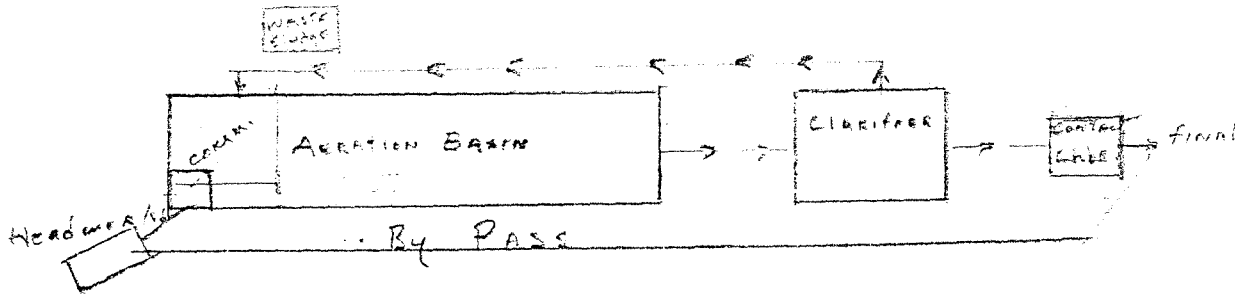
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15 Sec	3 Min.
3152	0930	<160 Est.	10		0.4	0.75
3153	1215	<180 Est.	10		0.4	1.0
3154	1445	< 40 Est.	10		0.3	0.5

Additional Laboratory Results

	ppm	#/day
NO ₃ -N ppm -	.80	.21
NO ₂ -N ppm -	.02	.005
NH ₃ -N ppm -	8.0	2.14
T. Kjeldahl-N ppm -	8.2	2.19
O-PO ₄ -P ppm -	3.0	.80
T-PO ₄ -P ppm -	4.4	1.17

Operator's Name Mr. Hillis Phone No. 484-3223

Furnish a flow diagram with sequence and relative size and points of chlorination.



Type of Collection System

☐ Combined ☒ Separate ☐ Both

Estimate flow contributed by surface or ground water (infiltration)

MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry _____

Dry _____

Wet _____

Wet _____

COMMENTS: _____

WATER QUALITY LABORATORY

DATA SUMMARY

Summary By Stephen D. Roll Date 7-30-75